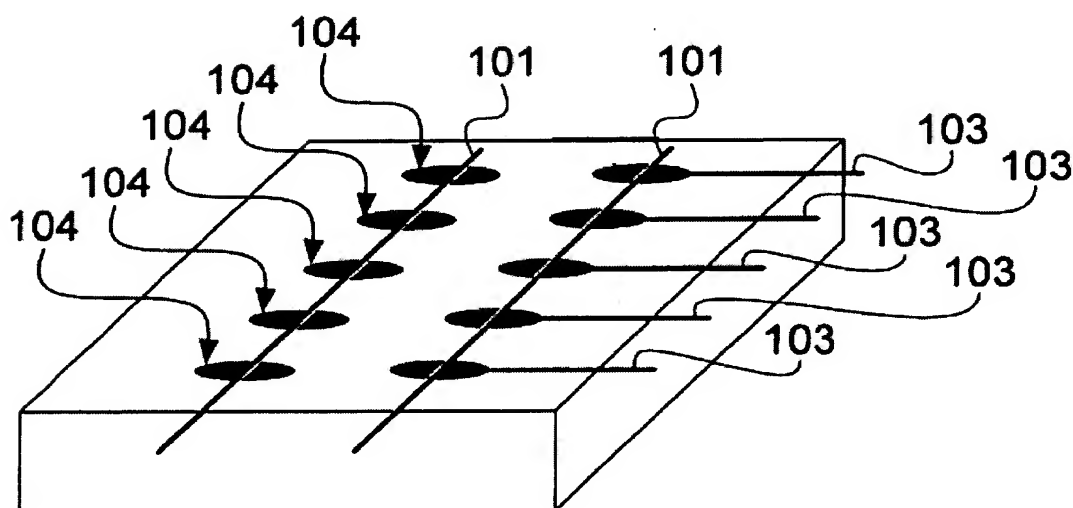
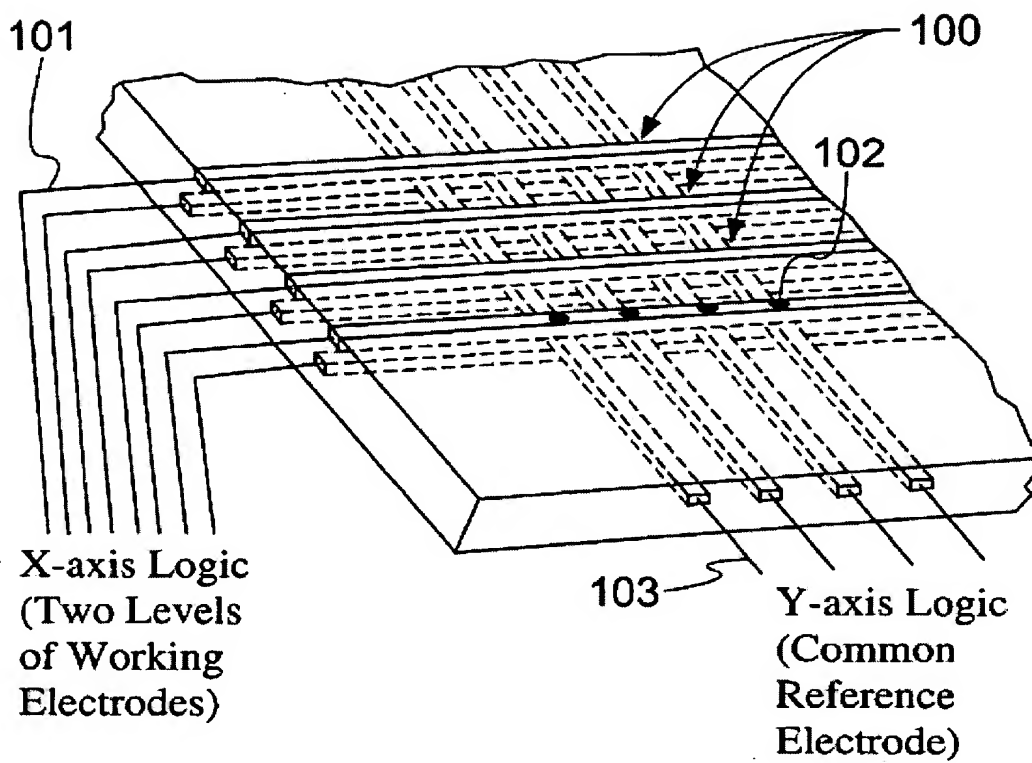


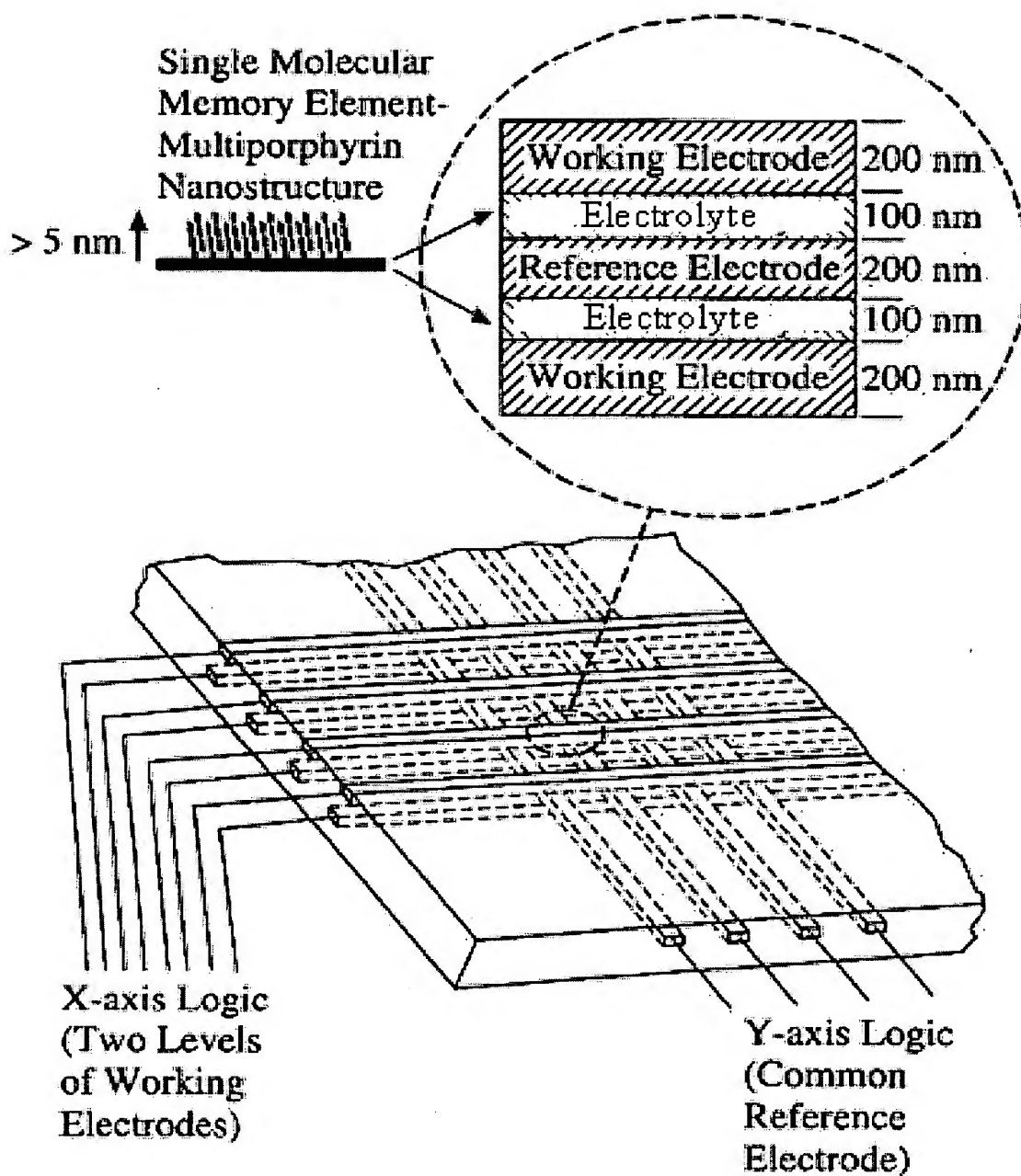
**Fig. 1**



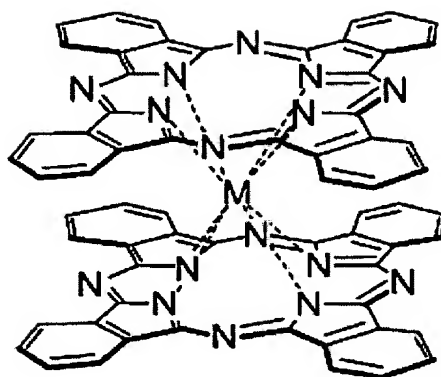
**Fig. 2**



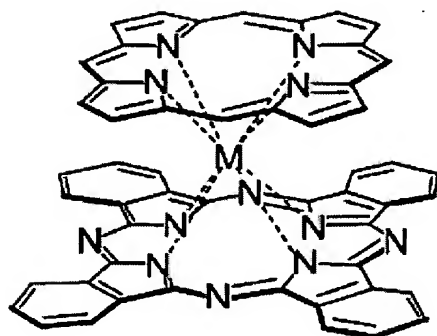
**Fig. 3**



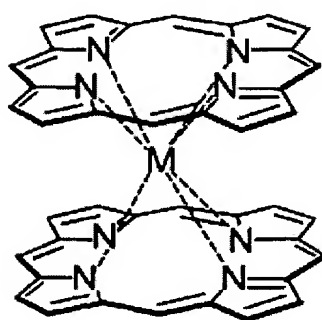
**Fig. 4**



(Pc)M(Pc)

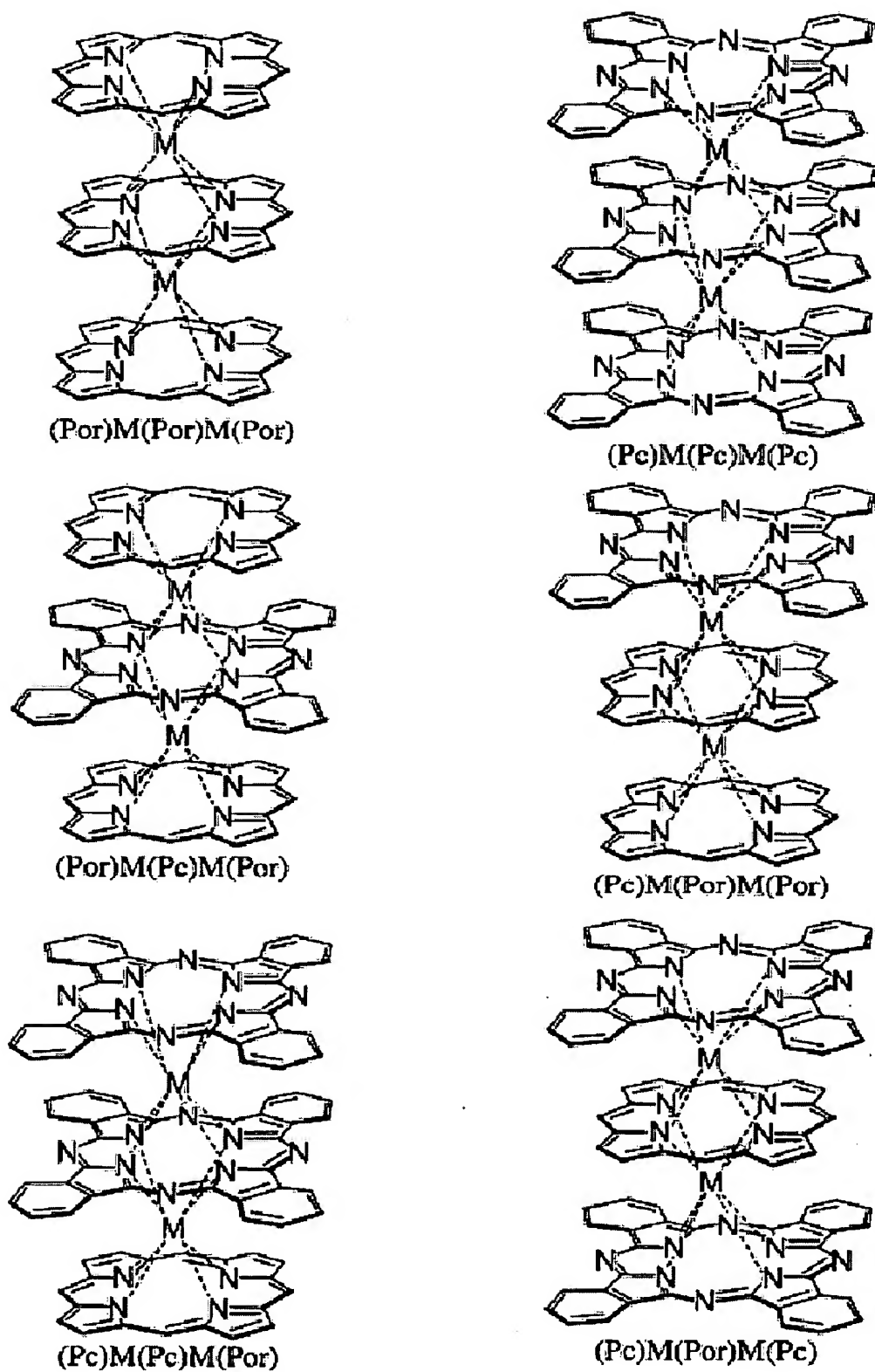


(Por)M(Pc)



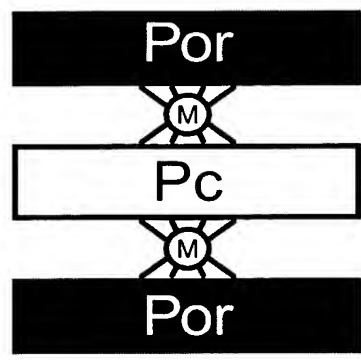
(Por)M(Por)

**Fig. 5**

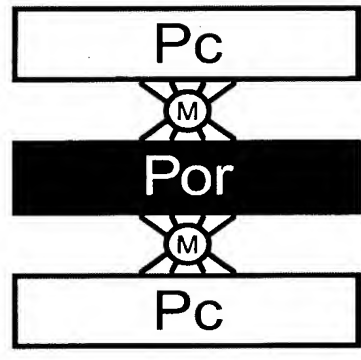


**Fig. 6**

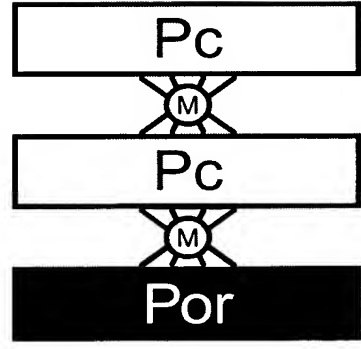
2007-09-20 08:06:20



type a

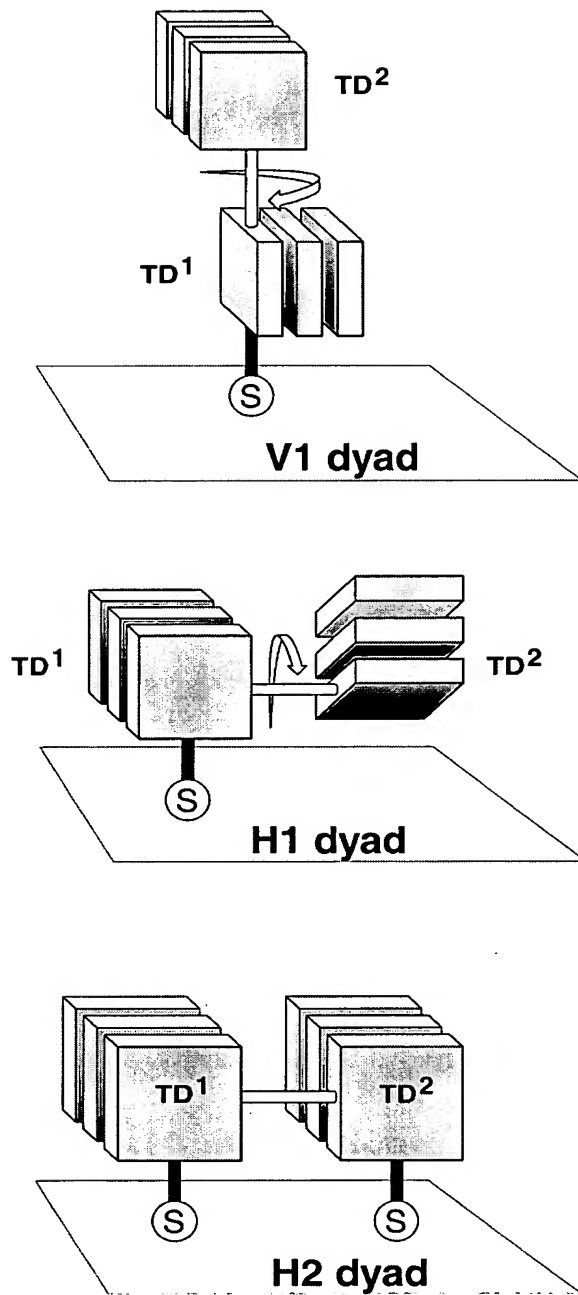


type b

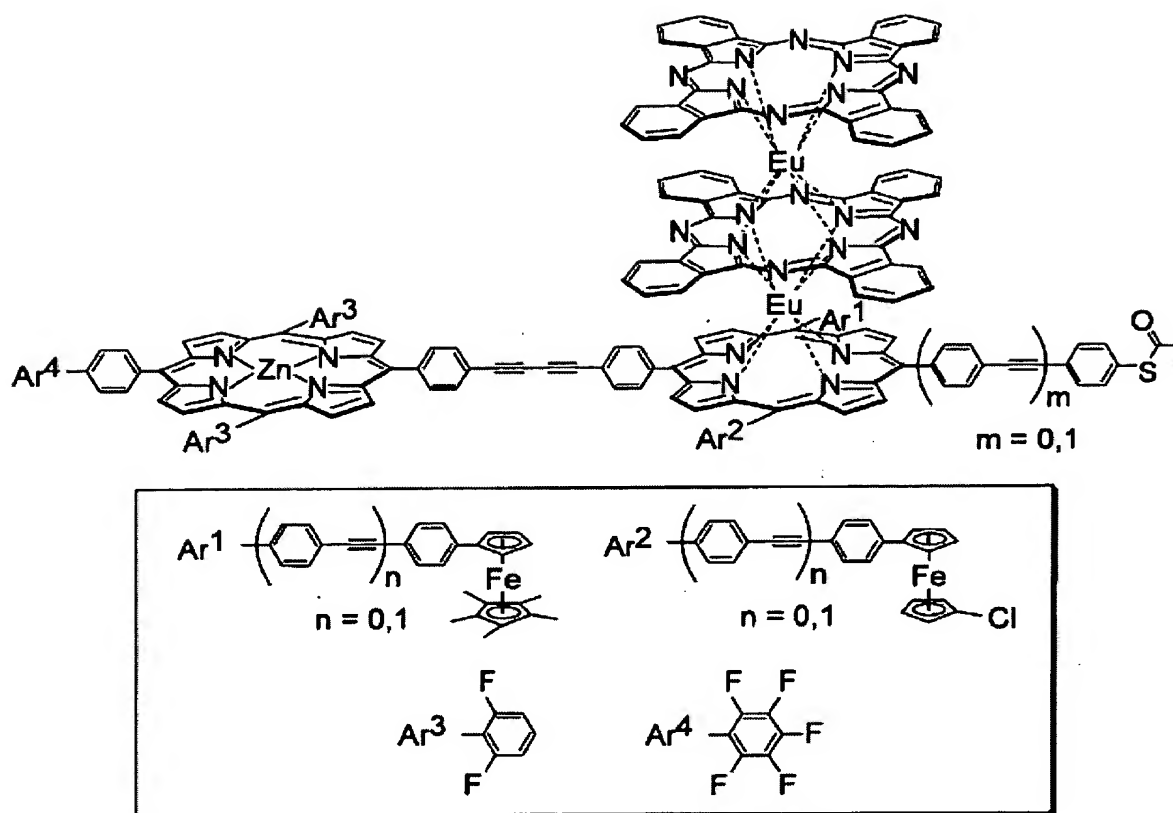


type c

**Fig. 7**

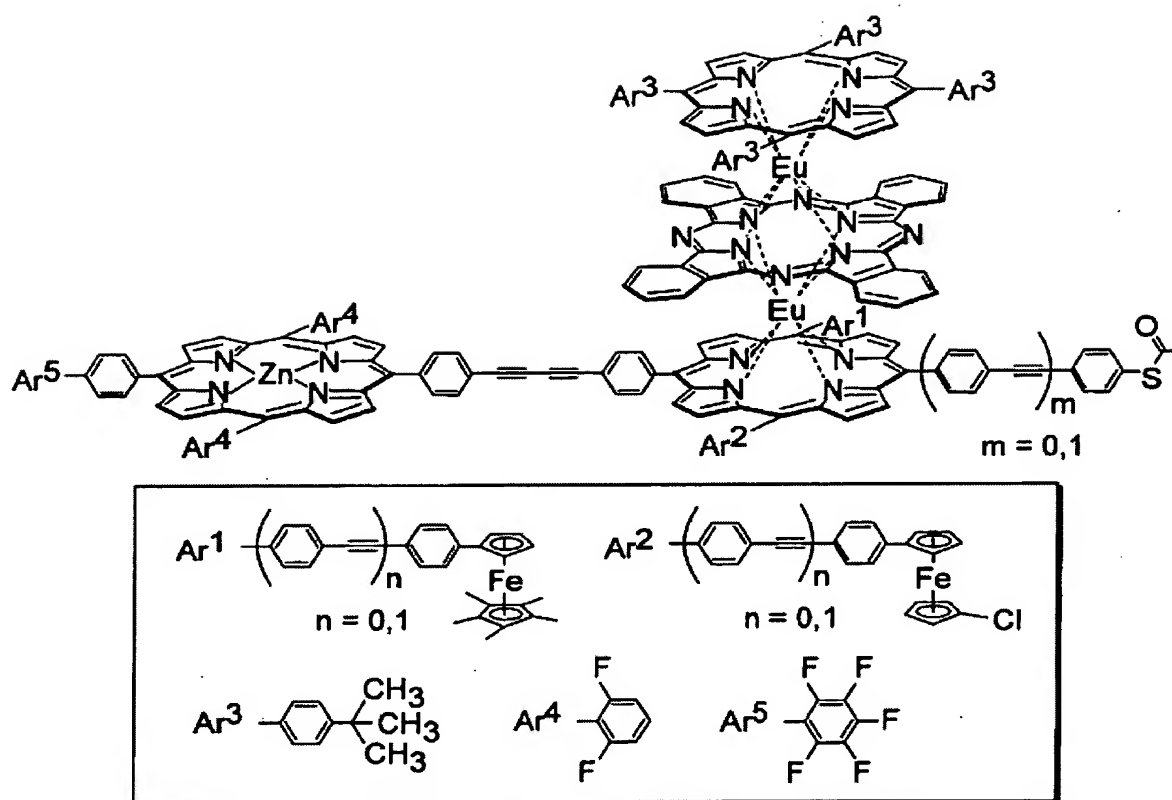


**Fig. 8**

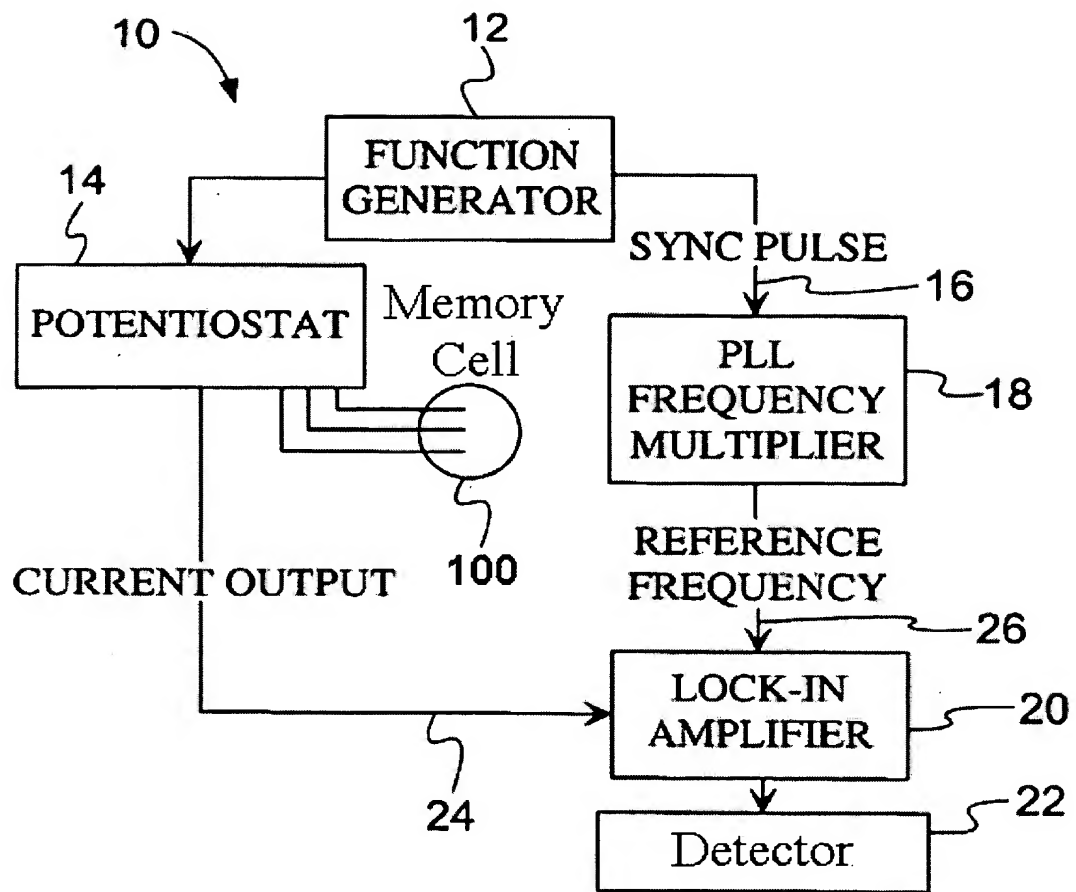


**Fig. 9**

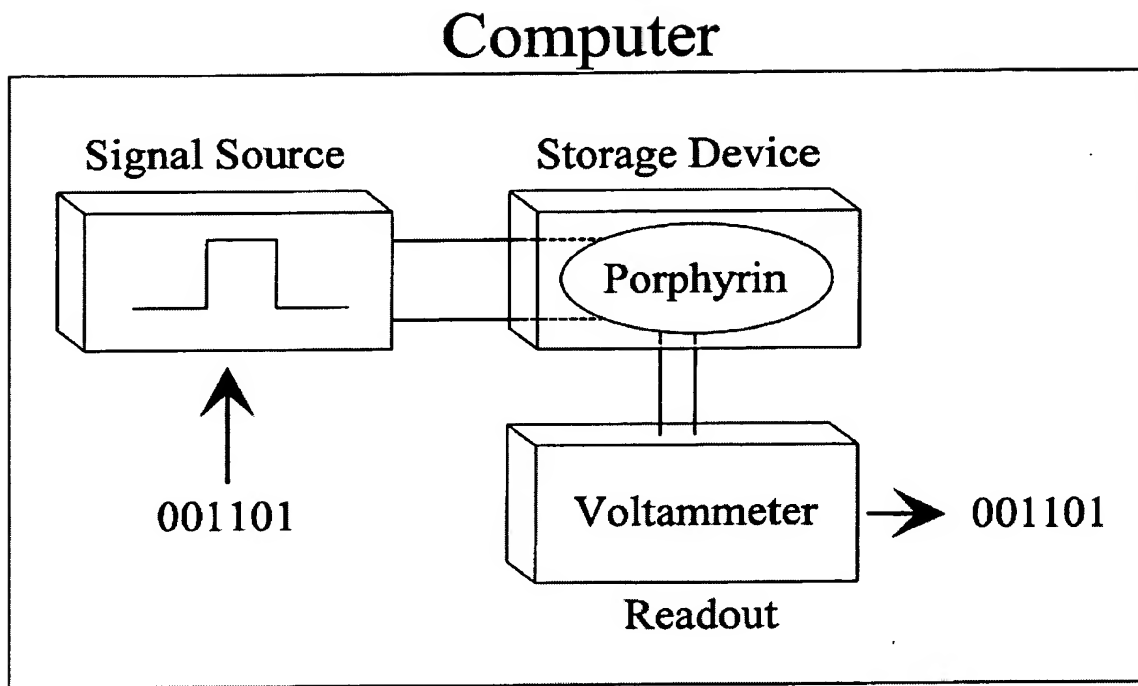




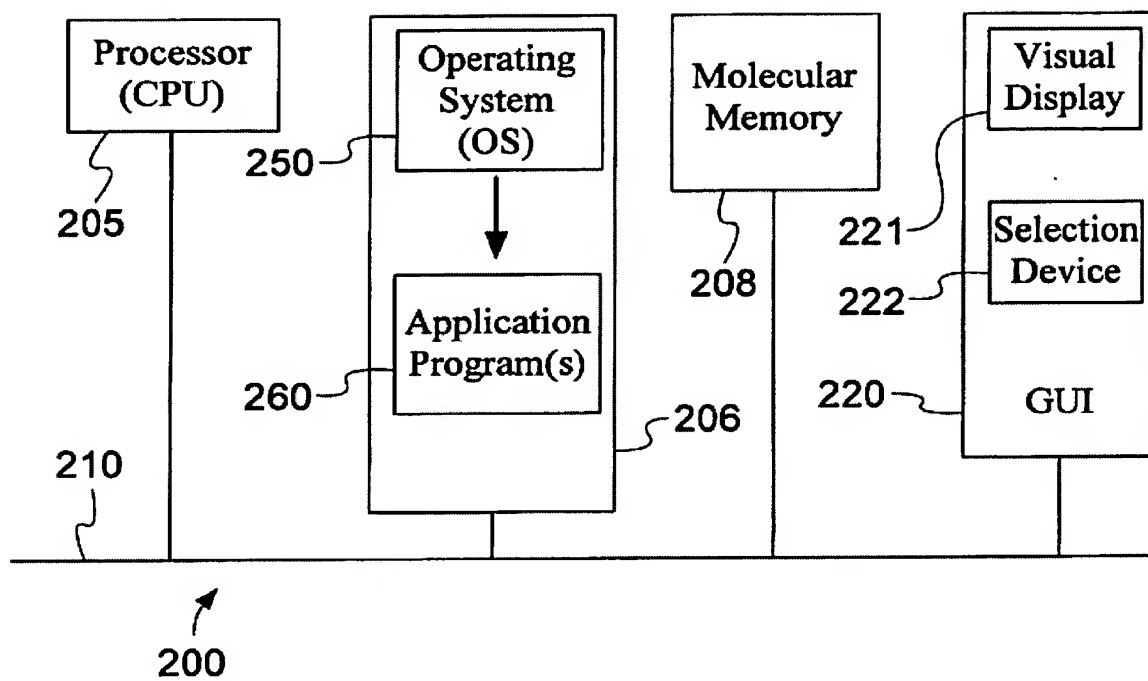
**Fig. 10**



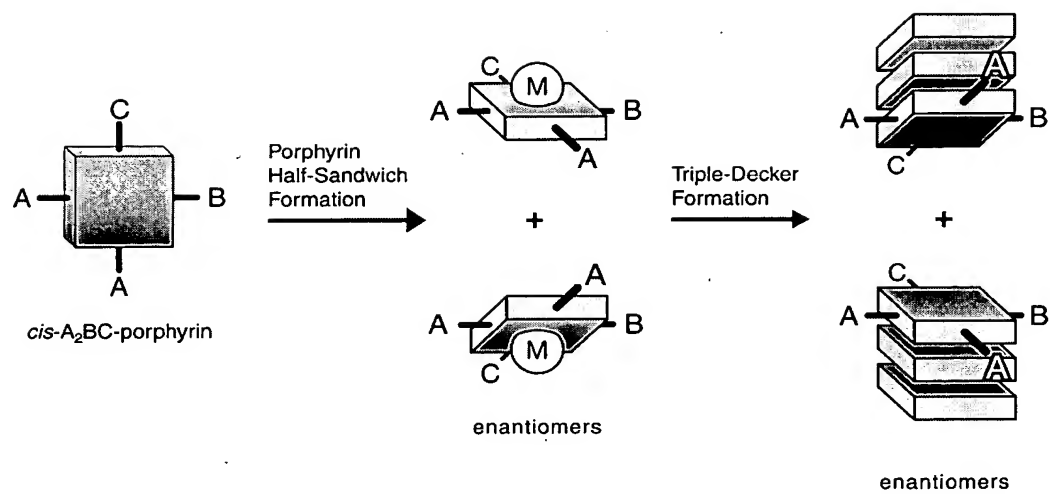
**Fig. 11**



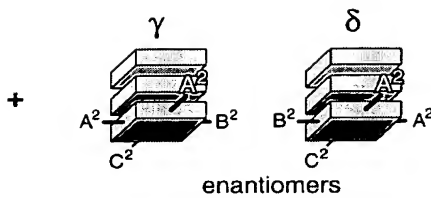
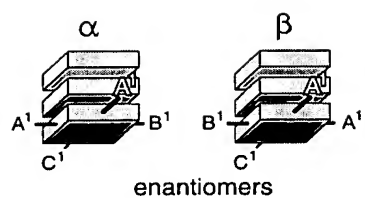
***Fig. 12***



**Fig. 13**

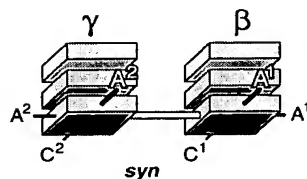
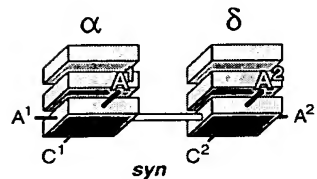


**Fig. 14**

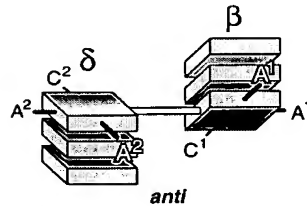
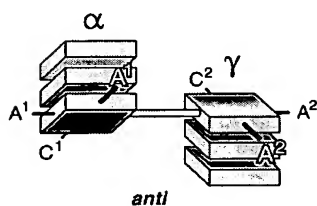


Triple-Decker  
Building Blocks

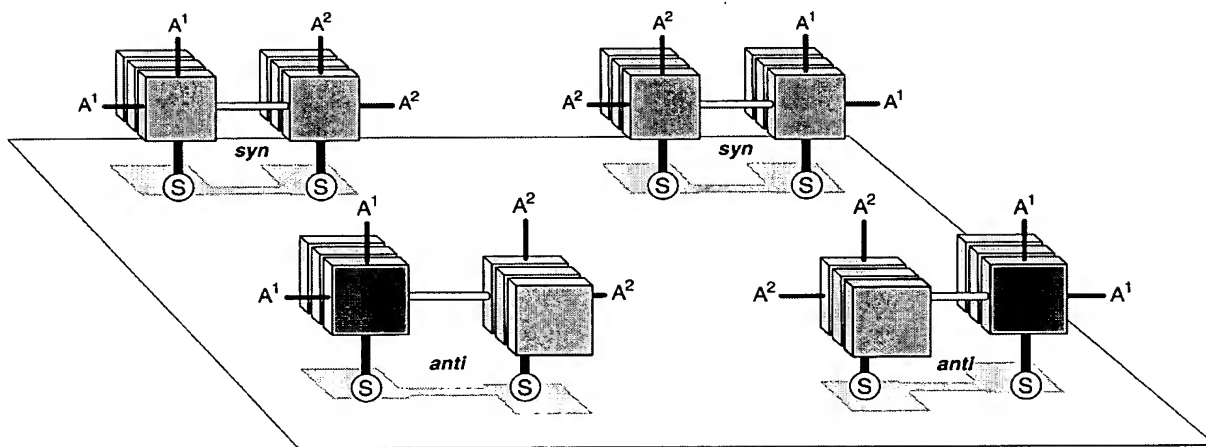
↓ join  $B^1 + B^2$  groups



Triple-Decker Dyads



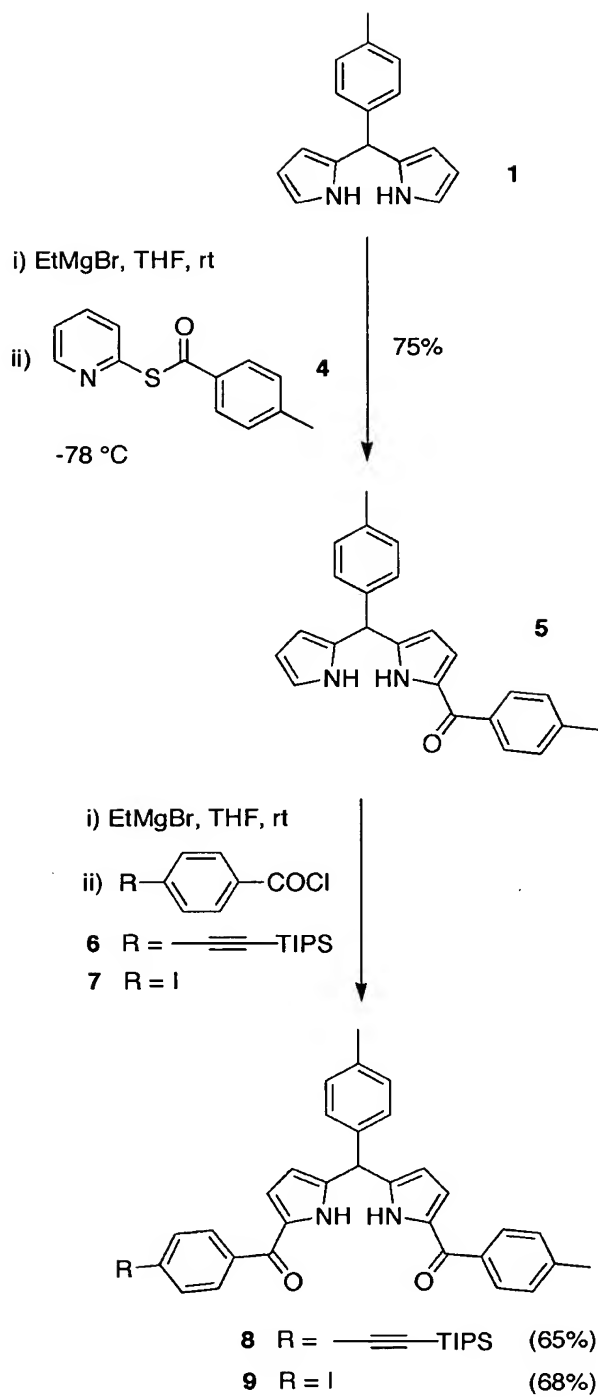
↓ (1) attach thiol linkers  
(2) create SAMs



electroactive surface

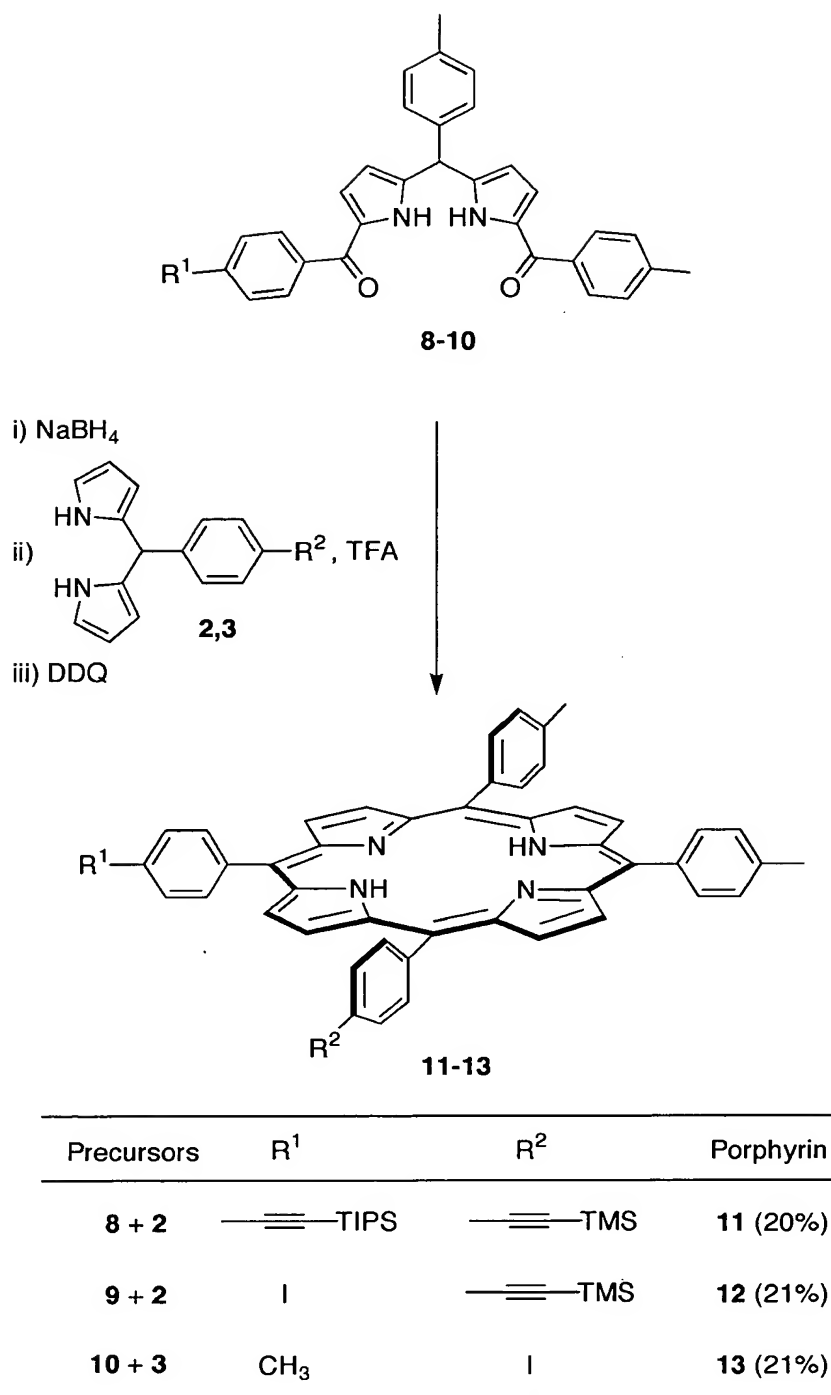
**Fig. 15**

Scheme 1

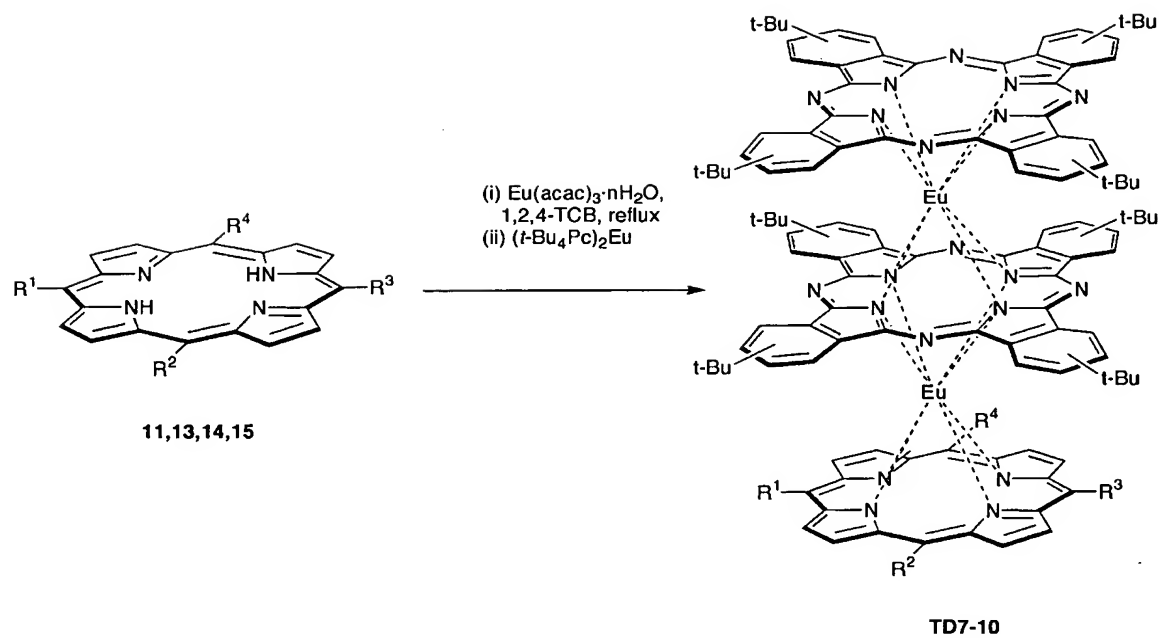


**Fig. 16**

Scheme 2

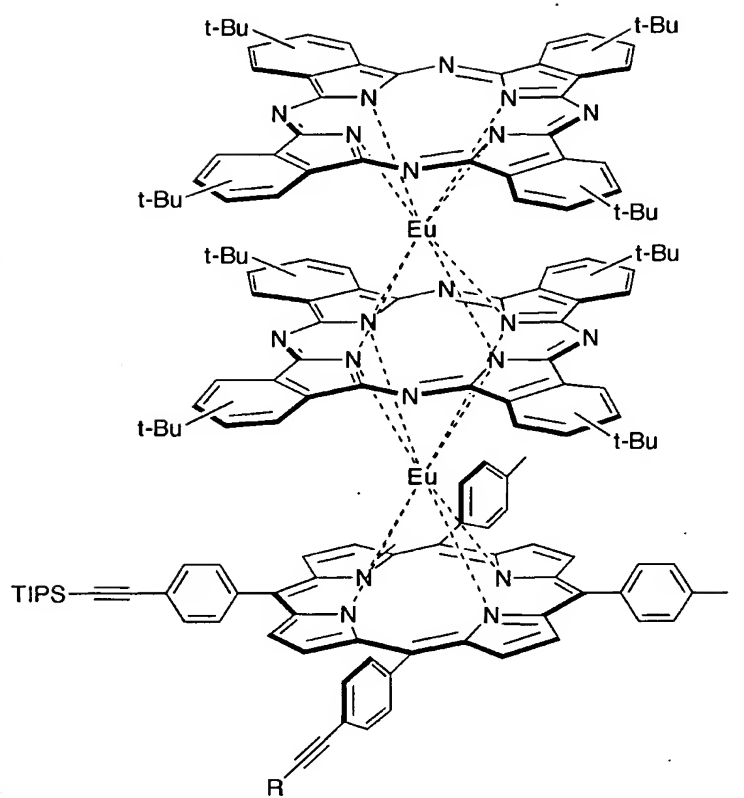
**Fig. 17**

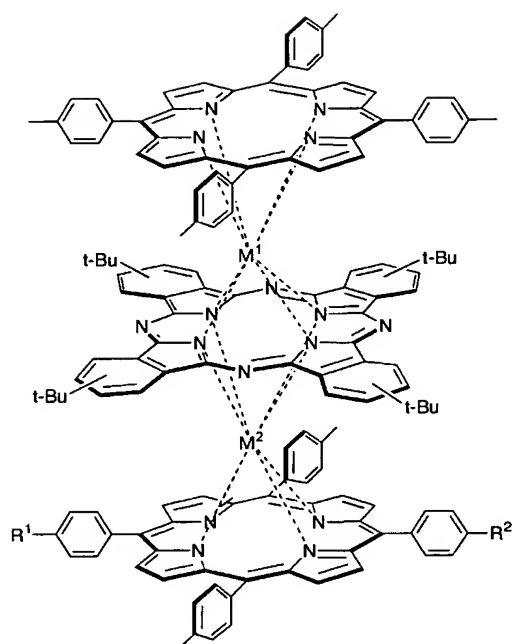




Porphyrin	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	Triple Decker	Yield
14		<i>p</i> -tolyl		<i>p</i> -tolyl	TD7	74%
11	<i>p</i> -tolyl			<i>p</i> -tolyl	TD8	79%
13	<i>p</i> -tolyl	<i>p</i> -tolyl		<i>p</i> -tolyl	TD9	62%
15	<i>n</i> -pentyl	<i>n</i> -pentyl		<i>n</i> -pentyl	TD10	25%

Fig. 18

**Fig. 19**

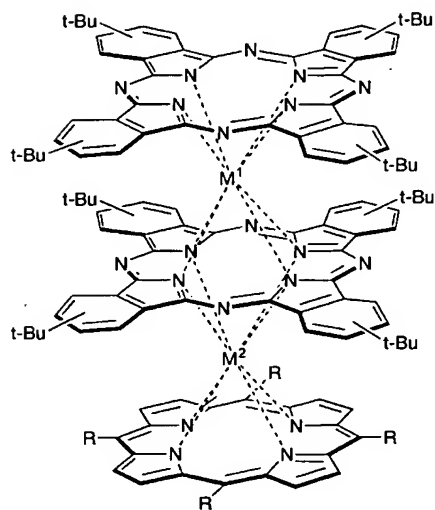


**Type a triple deckers**

**TD1**  $M^1/M^2 = \text{Eu}$ ,  $R^1/R^2 = \text{CH}_3$

**TD2**  $M^1/M^2 = \text{Ce}$ ,  $R^1/R^2 = \text{CH}_3$

**TD3**  $M^1 = \text{Eu}$ ,  $M^2 = \text{Ce}$ ,  $R^1 = \text{I}$ ,  $R^2 = \text{---TMS}$



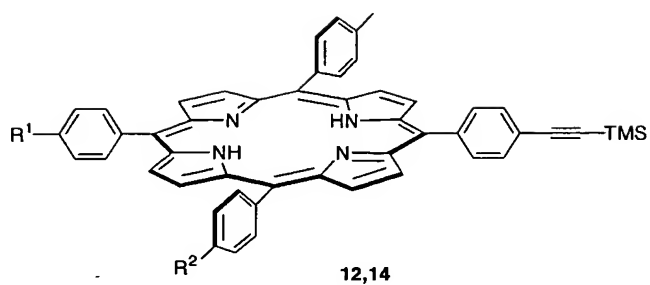
**Type c triple deckers**

**TD4**  $M^1/M^2 = \text{Eu}$ ,  $R = p\text{-tolyl}$

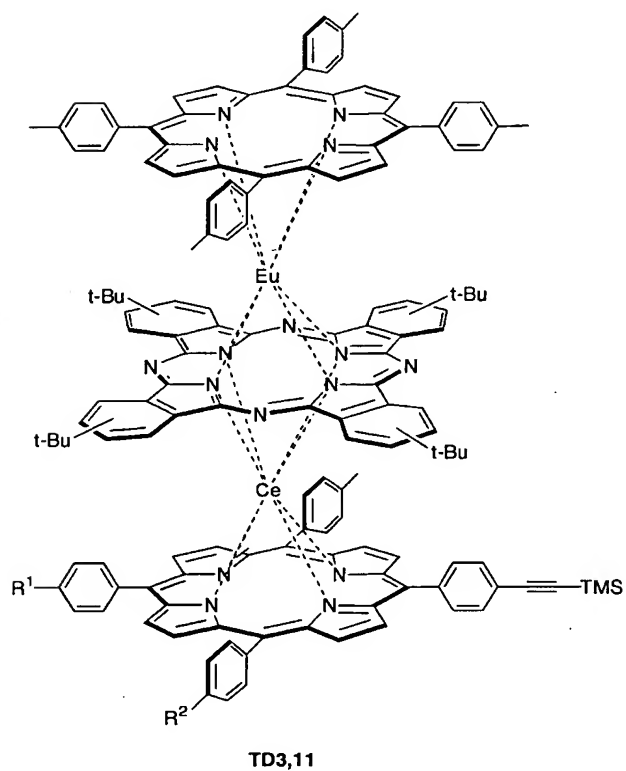
**TD5**  $M^1 = \text{Eu}$ ,  $M^2 = \text{Ce}$ ,  $R = p\text{-tolyl}$

**TD6**  $M^1/M^2 = \text{Eu}$ ,  $R = n\text{-pentyl}$

**Fig. 20**

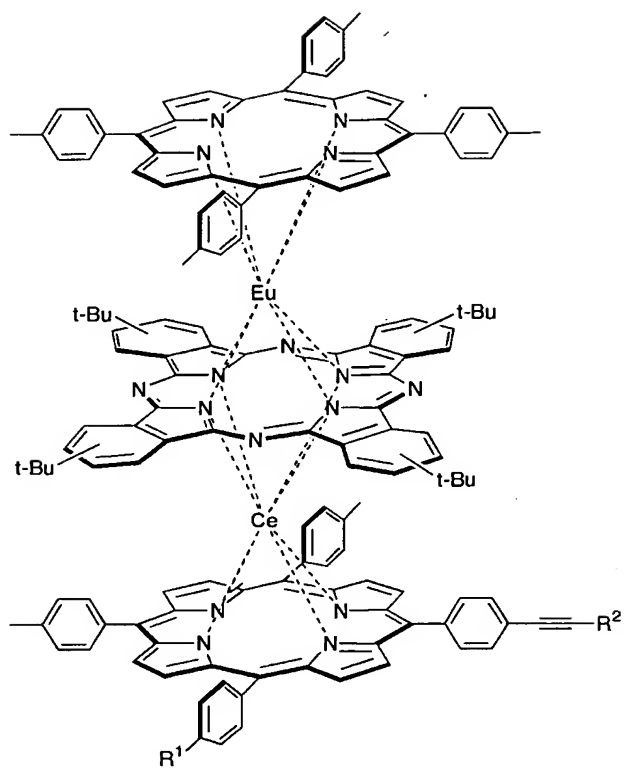


(i)  $\text{CeI}_3$ ,  
bis(2-methoxyethyl) ether,  
 $\text{LiN}(\text{SiMe}_3)_2$ , reflux  
(ii)  $(t\text{-Bu}_4\text{Pc})\text{Eu}(\text{TTP})$



Porphyrin	R <sup>1</sup>	R <sup>2</sup>	Triple Decker	Yield
<b>12</b>	CH <sub>3</sub>	I	<b>TD11</b>	54%
<b>14</b>	I	CH <sub>3</sub>	<b>TD3</b>	46%

**Fig. 21**



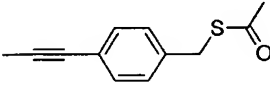
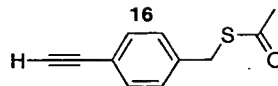
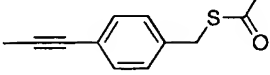
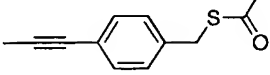
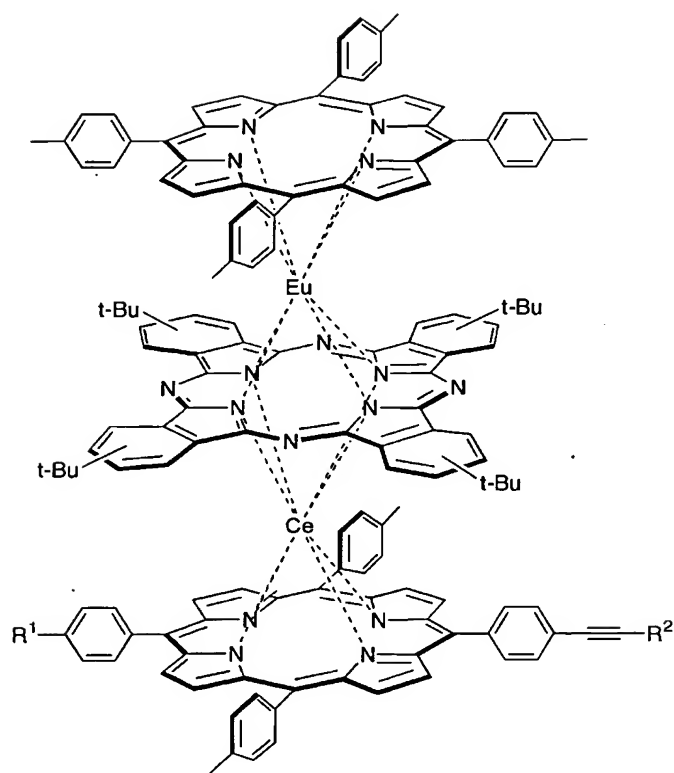
R <sup>1</sup>	R <sup>2</sup>	Triple Decker	
	TMS	TD11	 Pd(PPh <sub>3</sub> ) <sub>2</sub> Cl <sub>2</sub> , CuI THF, TEA, 35 °C (n-Bu) <sub>4</sub> NF, THF, 0 °C
	TMS	AcS-TD11 (57%)	
	H	AcS-TD11' (66%)	

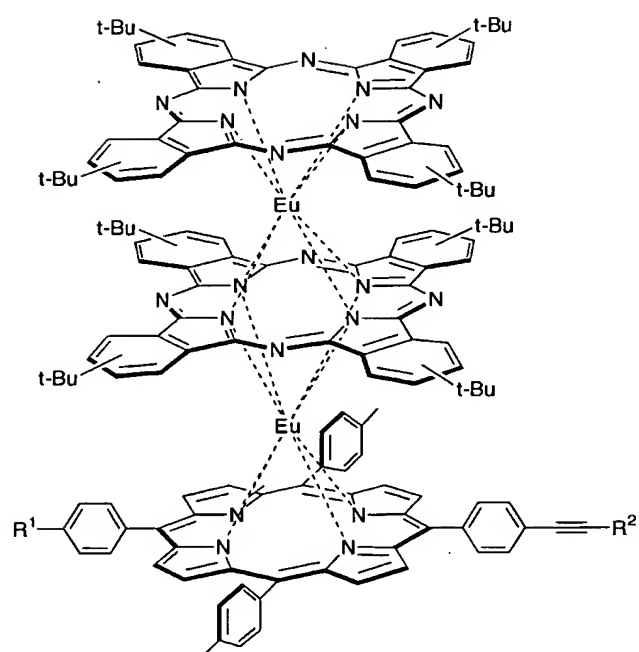
Fig. 22



R <sup>1</sup>	R <sup>2</sup>	Triple Decker
I	TMS	TD3
	TMS	AcS-TD3 (64%)
	H	AcS-TD3' (97%)

16  
 H-C≡C-Ph-CH<sub>2</sub>-S-C(=O)Me  
 Pd(PPh<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub>, CuI  
 THF, DIEA, 35 °C  
 (n-Bu)<sub>4</sub>NF, THF, 0 °C

Fig. 23



R <sup>1</sup>	R <sup>2</sup>	Triple Decker
I	TMS	TD7
	TMS	AcS-TD7 (59%)
	H	AcS-TD7' (89%)

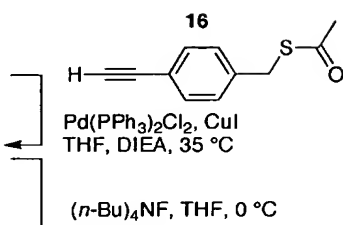
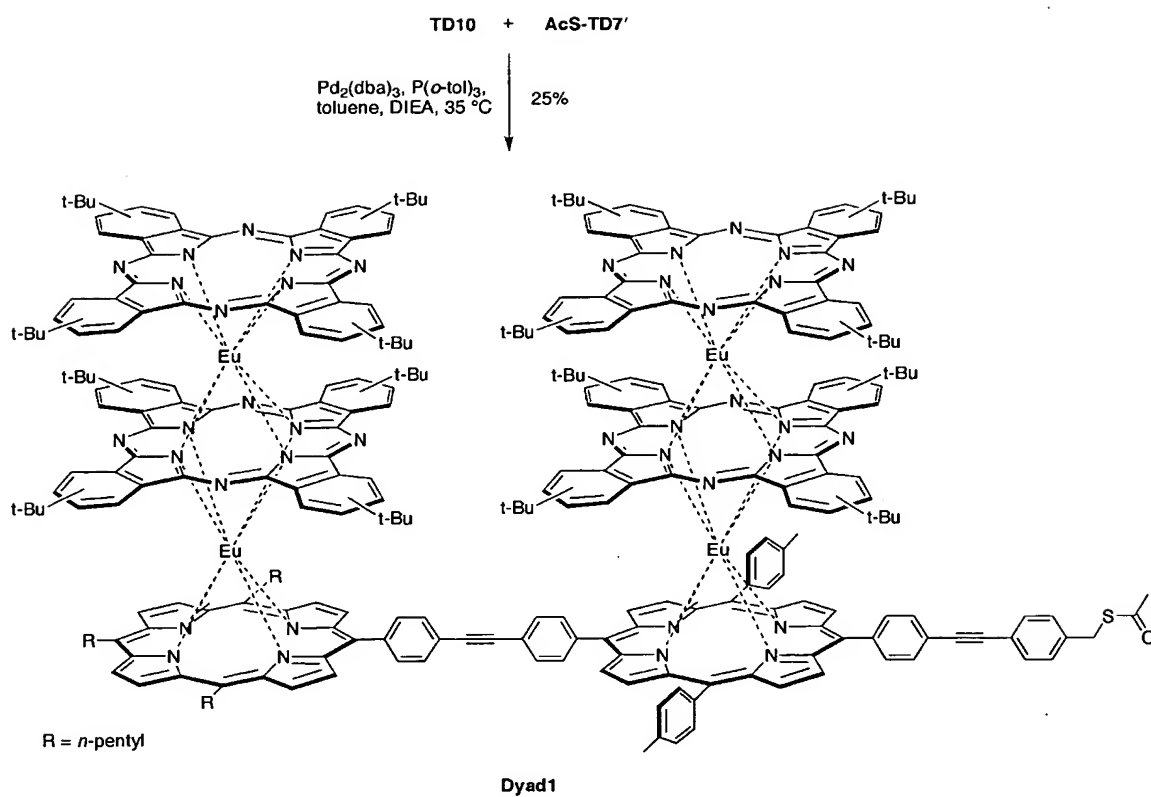
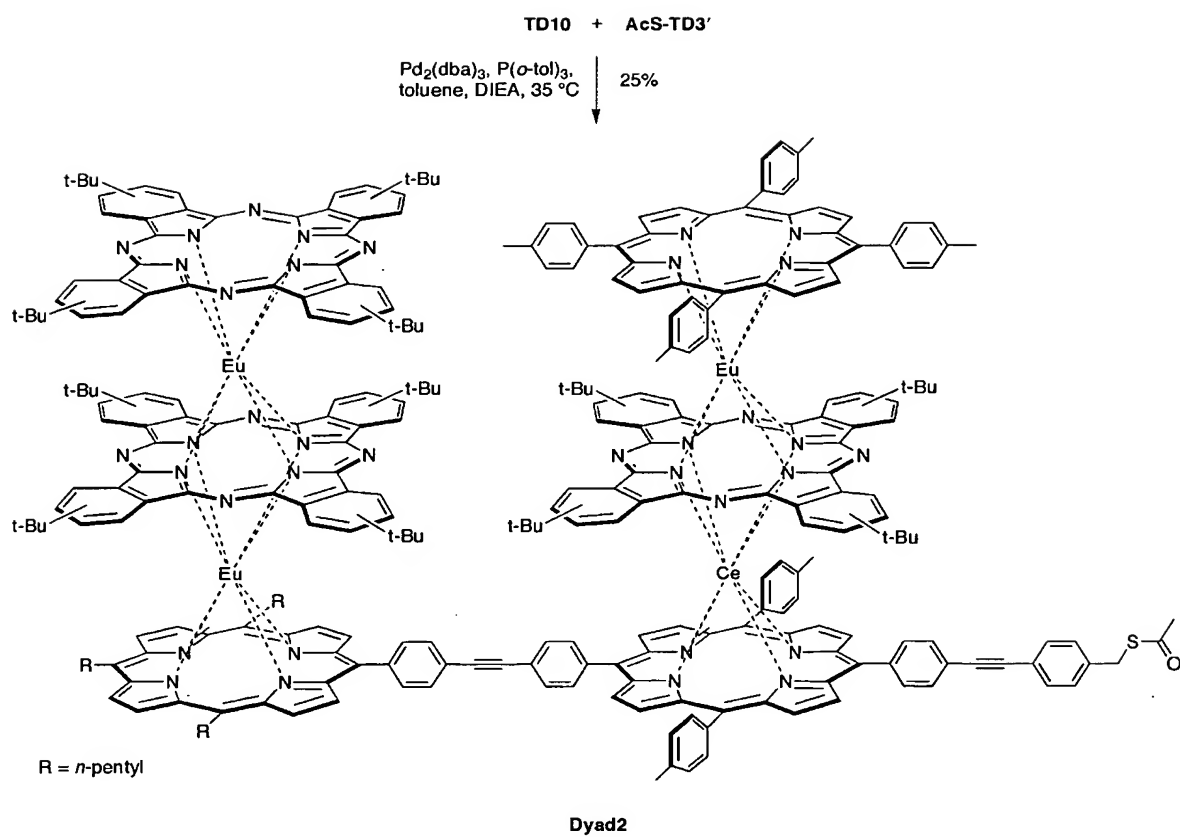
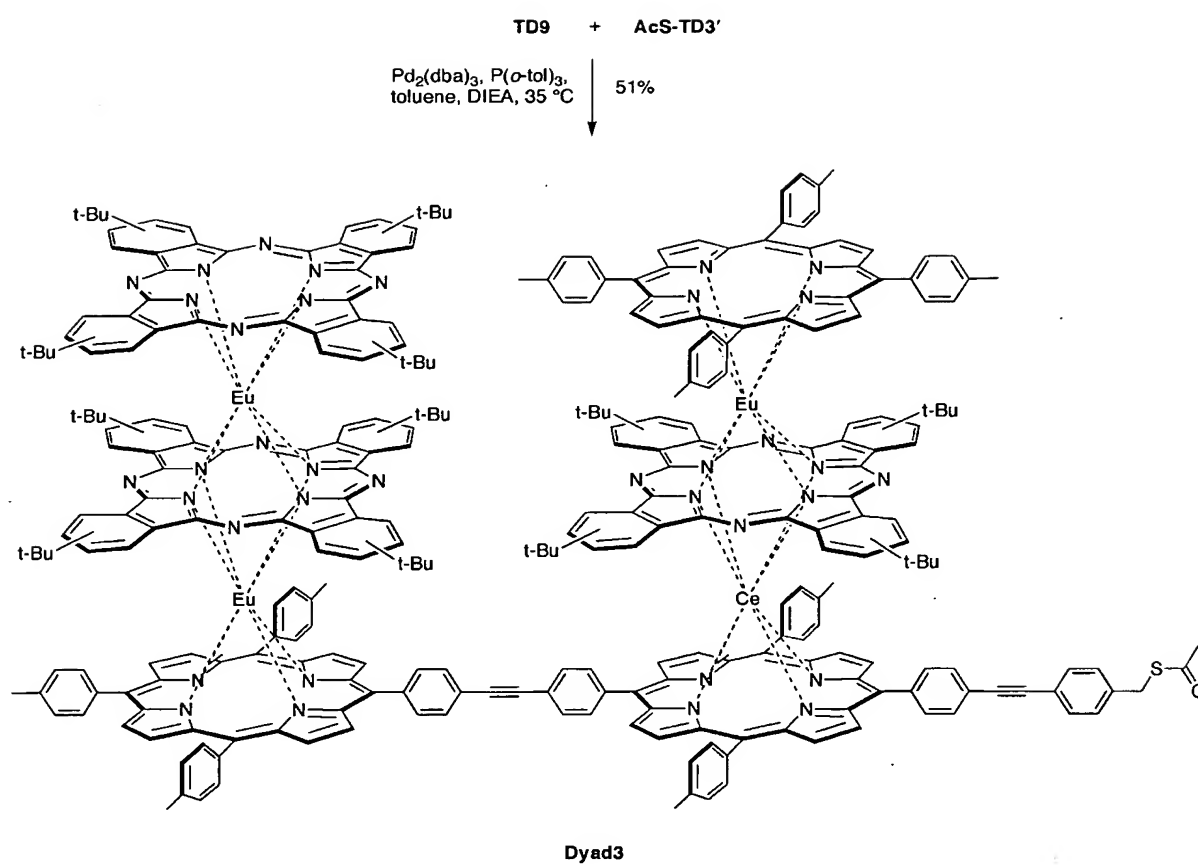


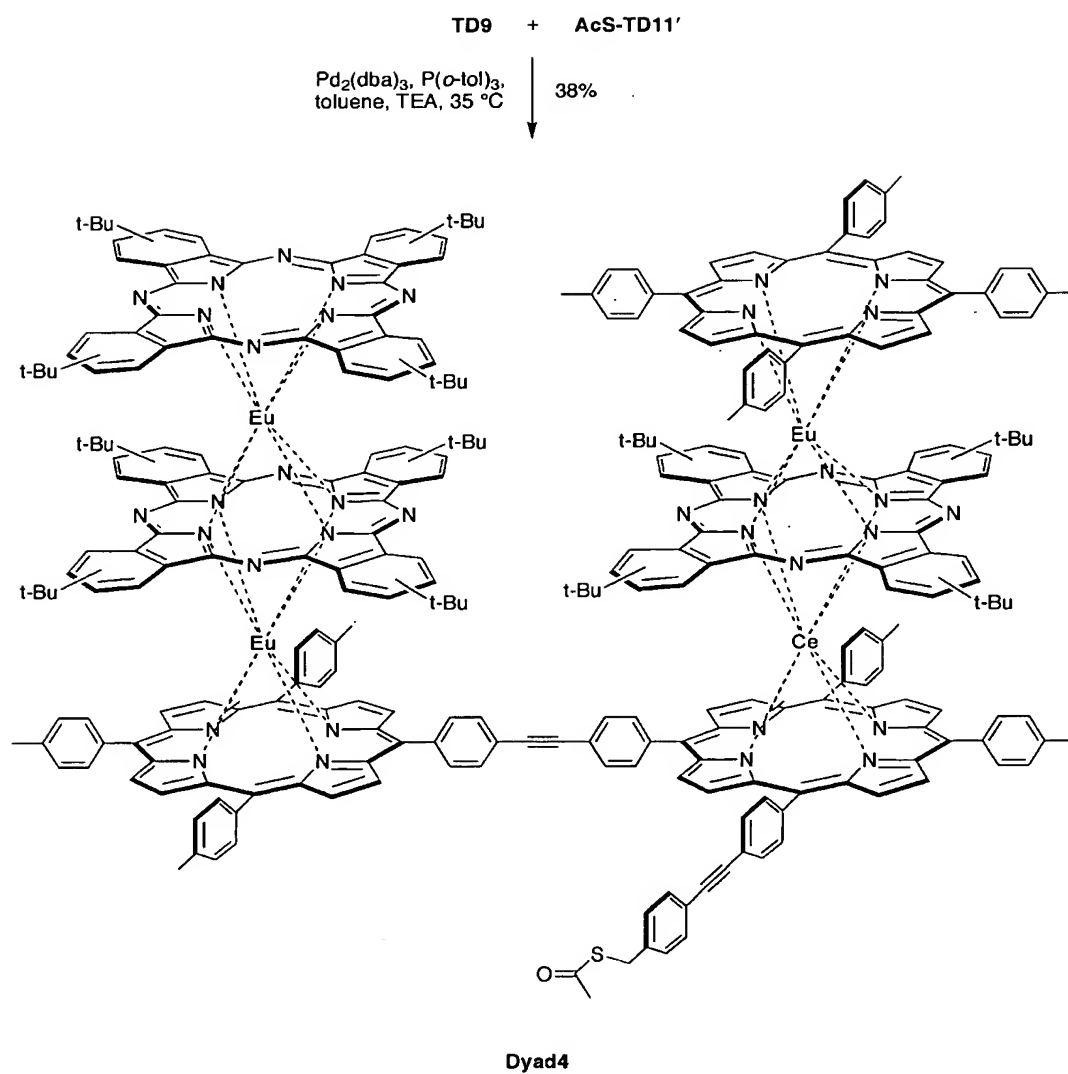
Fig. 24

**Fig. 25**



**Fig. 26**

**Fig. 27**

**Fig. 28**

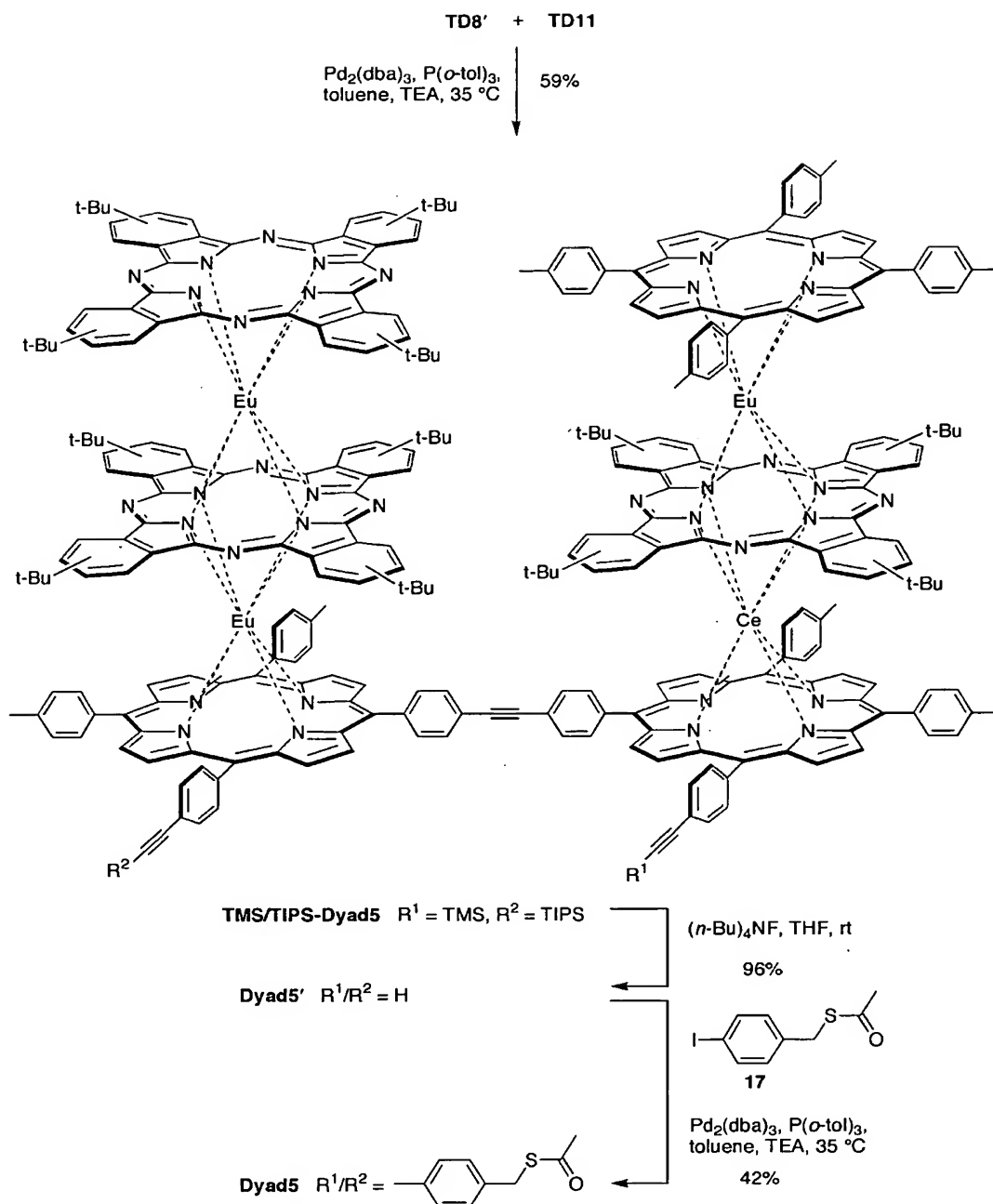
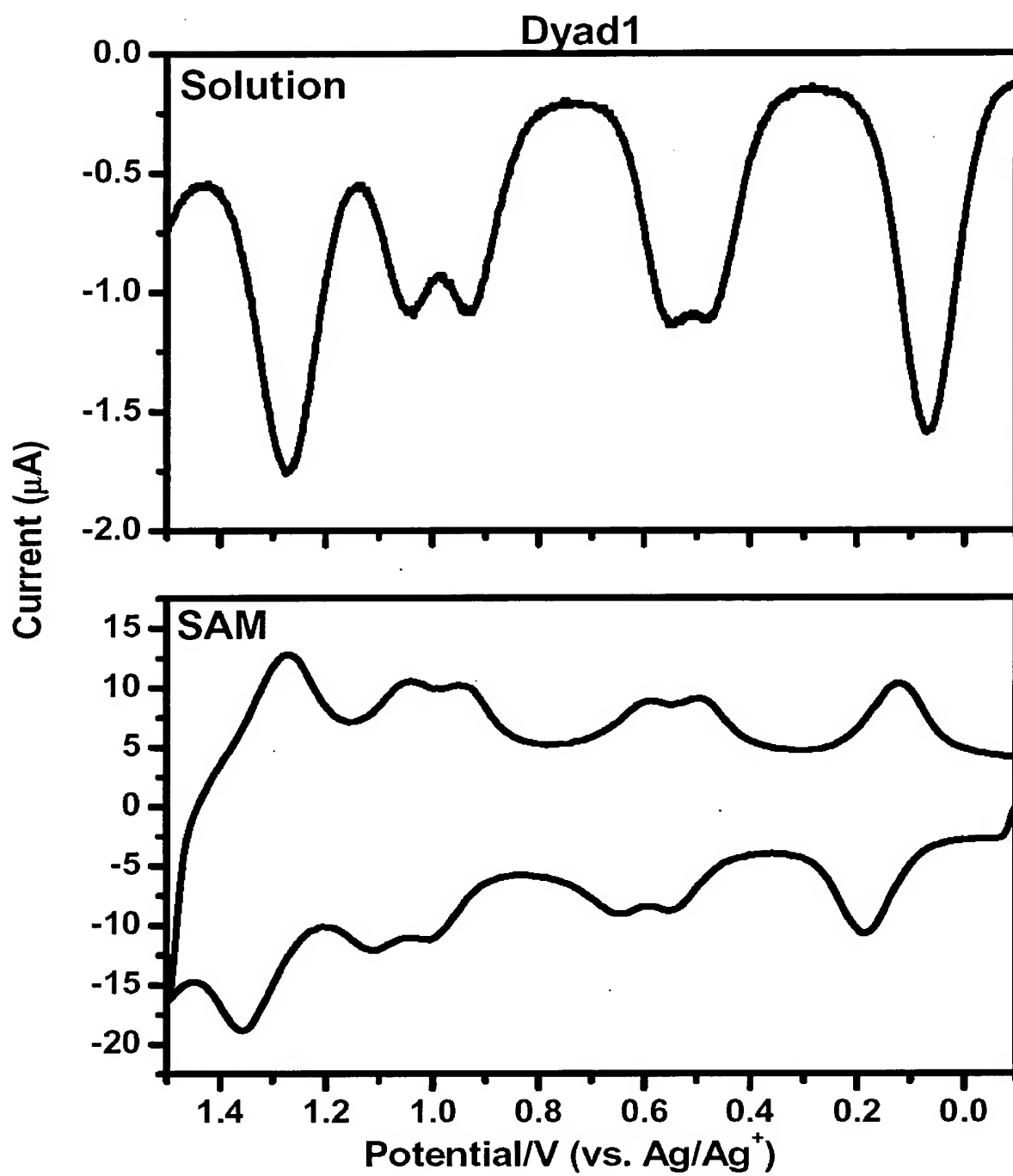
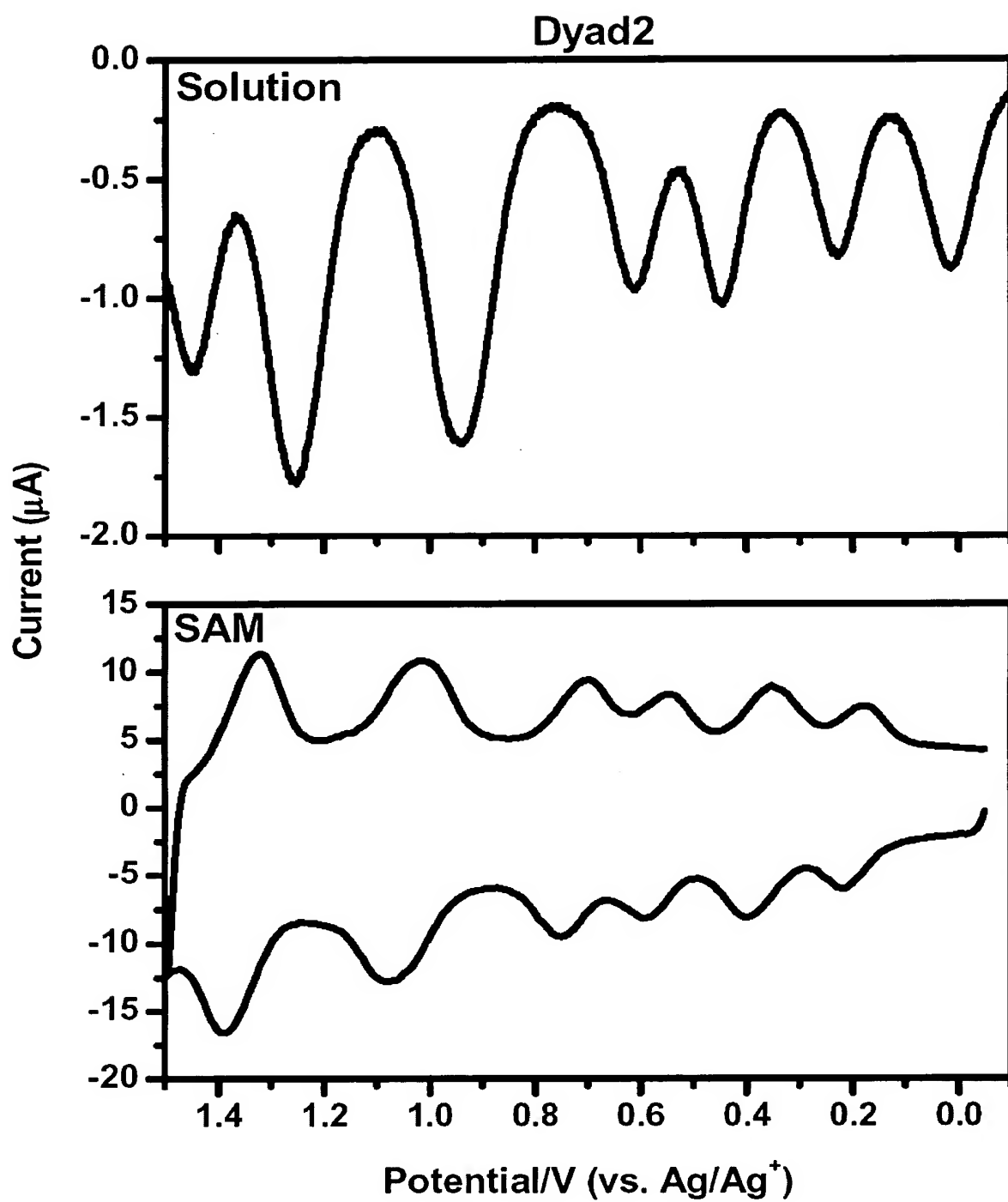


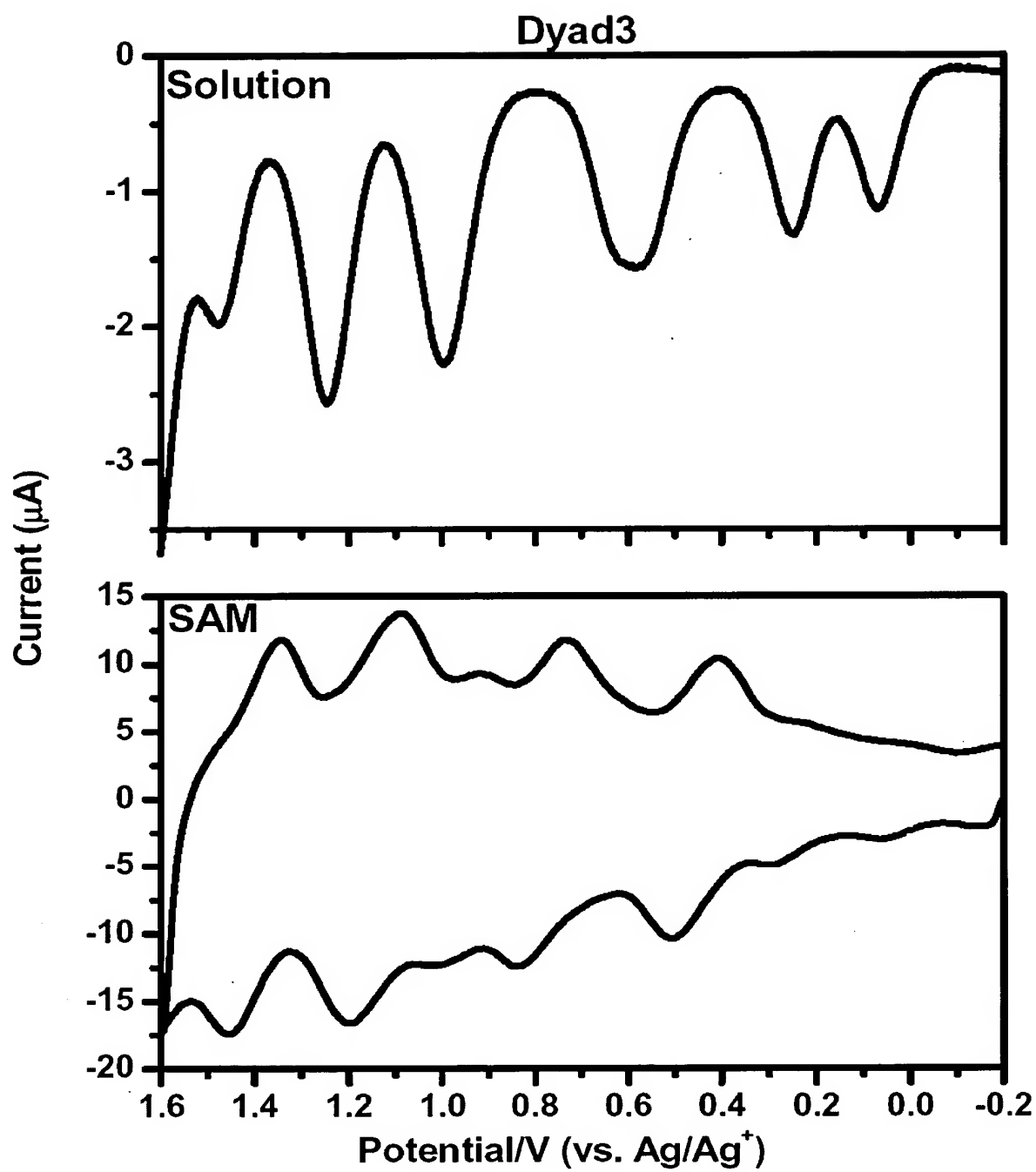
Fig. 29



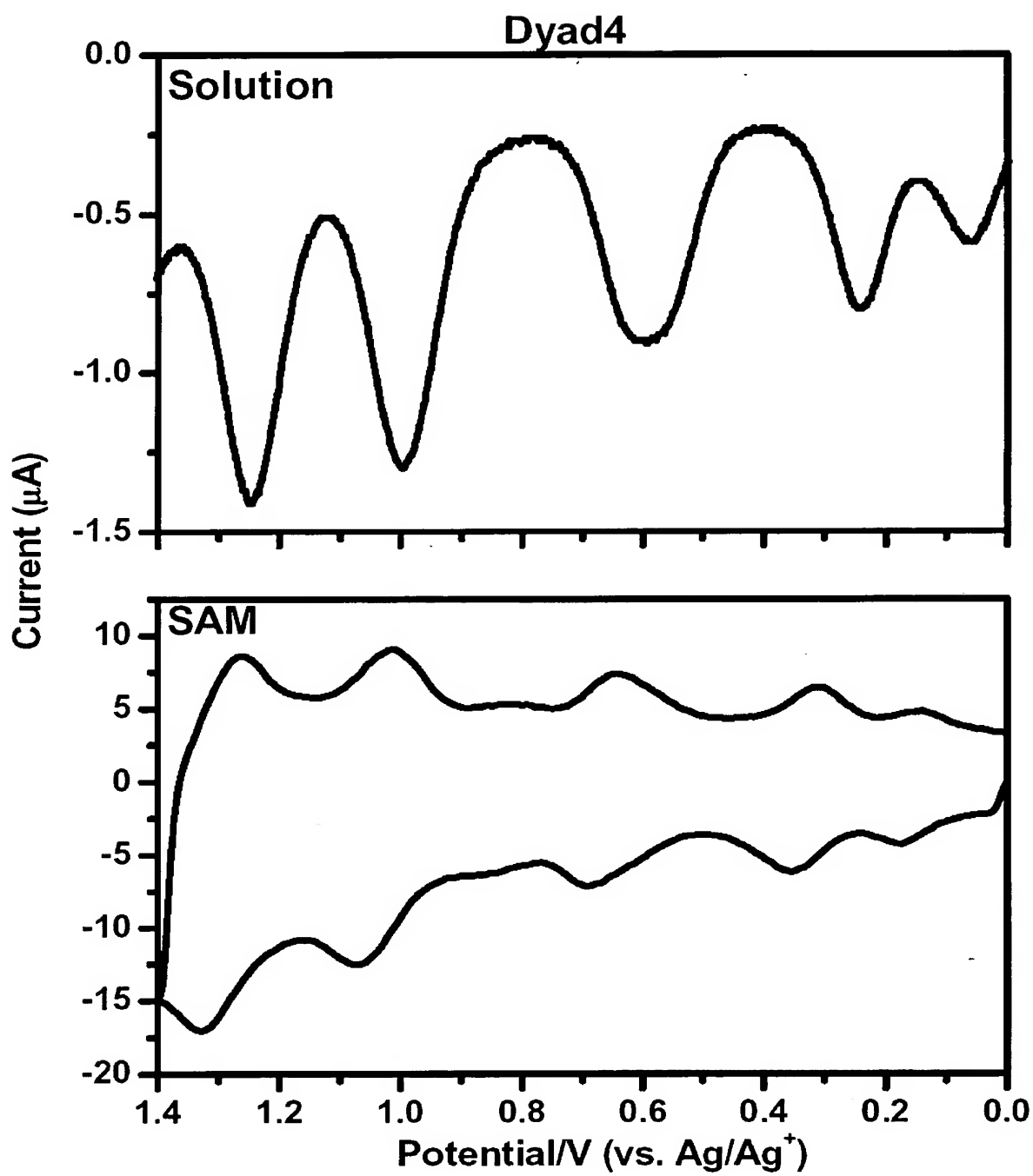
**Fig. 30**



**Fig. 31**

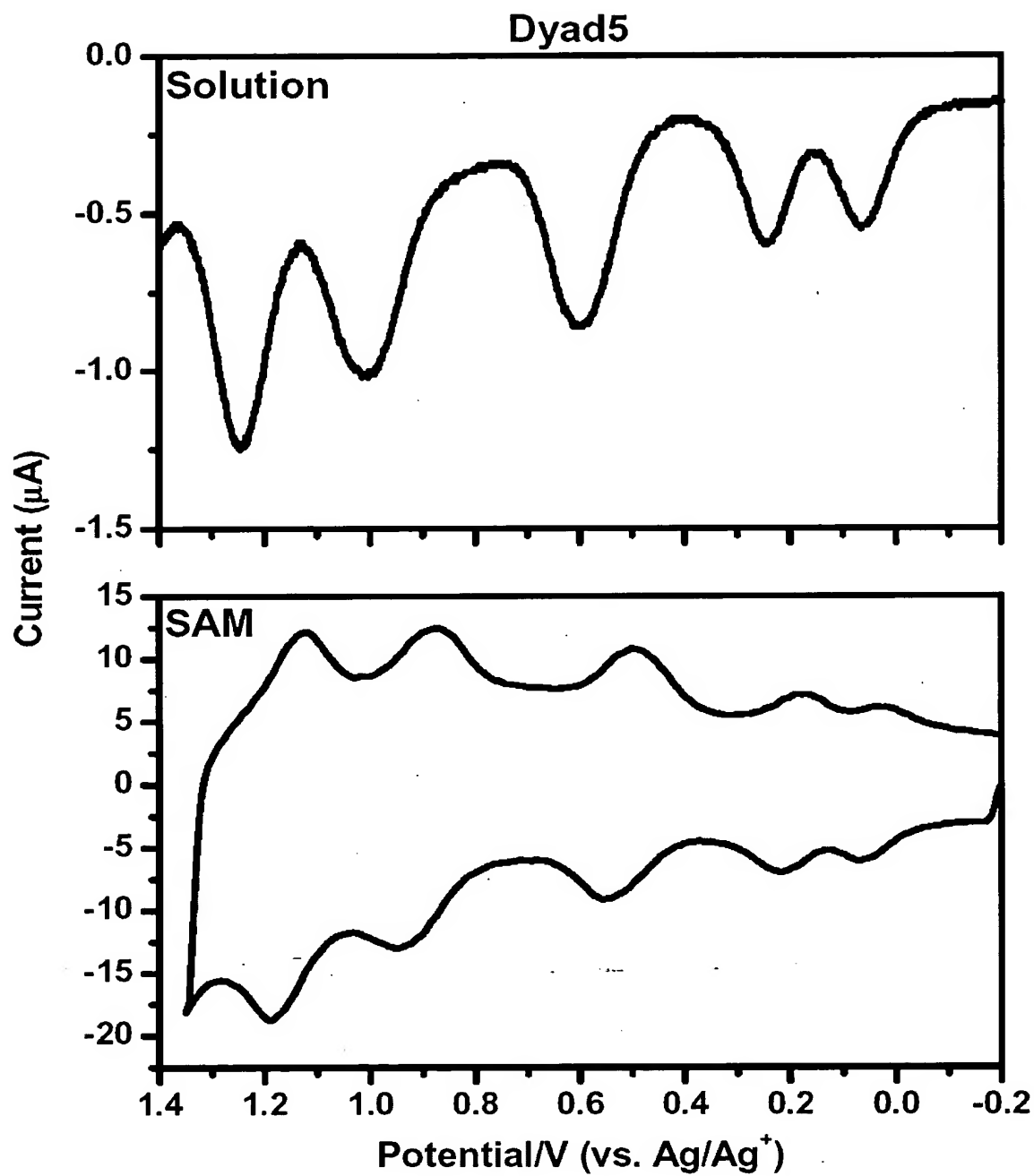


**Fig. 32**



**Fig. 33**





**Fig. 34**